



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,727	04/05/2007	Eiju Suzuki	Q92687	9652
23373 7590 12/27/2007 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER TESKIN, FRED M	
			ART UNIT 1796	PAPER NUMBER
			MAIL DATE 12/27/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/564,727	Applicant(s) SUZUKI ET AL.	
	Examiner Fred M. Teskin	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to: See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>20060117</u> . | 6) <input type="checkbox"/> Other: ____. |

Art Unit: 1796

Claims 1-5 are currently pending and under examination herein.

The disclosure is objected to because of the following informalities:

(I) At page 12, line 16, the term "dimethylphelocenium ..." is not understood. It appears that "...ferrocenium" was intended.

(II) Paragraph [0056], first sentence, states that "the cis-1,4-content and vinyl bond content of the resulting polymers A-D are within the ranges defined in the invention, respectively." However, per Table 1 in the preceding paragraph, polymer D has a cis-1,4-content (98.19 %) and a vinyl bond content (0.93 %) which fall outside the respective ranges specified for the corresponding parameters in claim 1, and this polymer is subsequently included in a comparative embodiment (*cf.*, Table 3 in [0064], Comparative Example 1).

Clarification and appropriate correction are required.

Claims 2 and 3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2 and 3 are ambiguous in the expression "metallocene type cation...". It is unclear how the word "type" is intended to affect the scope of the otherwise definite expression "metallocene cation". Clarification and appropriate correction are required.

Art Unit: 1796

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-5 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 16 of copending Application No. 10/562,157. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the overlapping scope of the mutually claimed subject matter. That is, claim 16 of the copending application is drawn to a tire wherein the rubber composition used in any member thereof contains a butadiene-based polymer having a cis-1,4- bond content of not less than 98.0 % and a vinyl bond content of not more than 0.3 % (as measured by FT-IR), which ranges respectively embrace and coincide with the ranges claimed herein for the corresponding parameters of a polybutadiene "used in any one of tire members" of a pneumatic tire (*cf.*, claim 1).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4429089 ("Pedretti") in view of US 6046266 ("Sandstrom") and the evidence provided by US 5428119 ("Knauf").

The claimed invention is a pneumatic tire, characterized in that a rubber composition including a polybutadiene with a cis-1,4 bond content of not less than 99.0 % and a vinyl bond content of not more than 0.3 % as measured by Fourier transform infrared spectroscopy (FT-IR) is used in any one of tire members.

Pedretti differs from the claimed subject matter in that use of a rubber composition including a polybutadiene having the requisite values of cis-1,4-bond content and vinyl bond content, as measured by FT-IR, in a member of a pneumatic tire is not explicitly disclosed.

Pedretti, however, details the preparation of polybutadienes with a vinyl bond content of less than 0.3 % and a cis-1,4-bond content just below 99.0 %; see in particular Examples 39 and 40 (cols. 11-12) wherein 1,4-cis values of 98.7 % and 98.8 % and a "1,2" value of 0.2 % are reported for polybutadiene products, based on infrared analysis (the "1,2" notation is presumed to refer to vinyl content). While Pedretti does not state that FT-IR was used, FT-IR spectroscopy is a standard analytical technique used in the prior art to measure 1,4- and 1,2-bond structures in polybutadiene as evidenced by Knauf (see col. 5, ll. 56+). To use this standard technique to conduct the infrared analysis in Pedretti would, therefore, have been well within the level of ordinary skill. Moreover, as to cis-1,4-bond content, Pedretti teaches that polymers obtained according to his inventive method have a high content of 1,4-cis units and, more particularly, "values higher than 99 % can be attained with butadiene" (col. 5, ll. 20-22). In the case of a polymer of butadiene that is totally of 1,4-cis structure, Pedretti identifies the property of stress-induced crystallization at higher than ambient temperatures as of practical interest in many applications, such as pneumatic tires (col. 3, ll. 18-27). Thus, motivation exists for one of ordinary skill to undertake the method of Pedretti such that the polymer produced is a polybutadiene that is essentially all cis-1,4 bond content, i.e., no less than 99 %, as claimed, and to use such product in pneumatic

Art Unit: 1796

tire applications. To include such product in rubber compositions for sidewall and tread members, per claims 4 and 5, would have been obvious to one of ordinary skill in the art at the time of applicants' invention, since the prior art has recognized the desirability of including cis-1,4-polybutadiene in tire tread and sidewall compounds as taught by Sandstrom (at, e.g., col. 1, ll. 45-62; col. 3, ll. 6-8; col. 4, ll. 36-42 and col. 16, ll. 41-45).

Regarding claims 2 and 3, the limitation to polymerizing using a defined catalyst is not seen as patentably distinguishing in view of the similarity in type and amount of bond structures between the obtained polymer and polybutadiene as disclosed by Pedretti. Where a product-by-process claim is rejected over a prior art product that appears to be identical, although produced by a different process, the burden properly shifts to applicants to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 195 (Fed. Cir. 1983).

The comparative experiments presented in the instant specification are noted; however, it is well settled that evidence of unexpected results must relate to the closest prior art, *In re DeBlauwe*, 222 USPQ 191, 196 (Fed. Cir. 1984). Thus, while applicants' comparative polybutadienes have a maximum cis-1,4-content of 98.19 % and a minimum vinyl content of 0.93 % (Polymer D, Table 1), Pedretti Examples 39-40 are considered more relevant in that the polybutadienes described therein are closer to the claimed invention in terms of both cis-1,4 bond content and vinyl bond content. There being no comparative data representative of the closest embodiments of Pedretti, the objective evidence of record is not probative of unobviousness.

Art Unit: 1796

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2005/0233894 ("Kaita") in view of Sandstrom.

The primary reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Kaita discloses polybutadiene with a cis-content in microstructure within claim 1, obtained by polymerizing in the presence of a catalyst composed of a gadolinium compound as defined in claims 2 and 3 (see Examples 3-5 on page 6 of Kaita). Though not reported in these examples, a vinyl bond content within applicants' claims is reasonably inferred based on the identity of monomer and polymerization catalyst.

Art Unit: 1796

Where Kaita differs from the claimed invention is in failing to disclose that its polybutadiene products may be used in a pneumatic tire member. However, as aforementioned, the inclusion of cis-1,4-polybutadiene in rubber compositions for tire members such as tread and sidewall is well known in the prior art to afford practical benefits as taught by Sandstrom. Motivated by an expectation of achieving equivalent performance in pneumatic tire elements, it would have been obvious to an ordinarily skilled practitioner to utilize the cited polybutadiene product(s) of Kaita in creating the rubber composition and tire components of Sandstrom, and thereby arrive at the present invention.

No claims are in condition for allowance at this time.

Any inquiry concerning this communication should be directed to Examiner F. M. Teskin whose telephone number is (571) 272-1116. The examiner can normally be reached on Monday through Thursday from 7:00 AM - 4:30 PM, and can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The appropriate fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

Art Unit: 1796

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


FRED TESKIN
PRIMARY EXAMINER
1796

FMTeskin/12-17-07